

Arid Soil Research and Rehabilitation

Volume 3, Number 1, 1989

Contents

Amelioration of a Saline-Sodic Soil with Low Applications of Calcium and Nitrogen Amendments M.R. Carter and J.R. Pearen	1
Variation in Salt Tolerance of Alfalfa Ramzi M. Mohammad, W.F. Campbell, M.D. Rumbaugh	11
Geochemistry of Waters in the Kouroumari Region, Mali; Al, Si, and Mg in Waters Concentrated by Evaporation: Development of a Model Vincent Valles, Mamadou N'Diaye, Anne Bernadac, and Yves Tardy	21
Soils and Reforestation in the Central Rangelands of Somalia Pay Drechsel, Wolfgang Zech, and Martin Kaupenjohann	41
Mechanisms of Nonbiological Pyritic Sulfur Oxidation Under Alkaline Conditions Aaron D. Brown and J.J. Jurinak	65
Humification of Organic Matter in Soil Affecting Availability of Phosphorus from its Mineral Compounds R.A. Khalil and M.M. El-Shinnawi	77
Technical Note: Calculation for the Preparation of Salt Mixtures to Develop Artificial Salinity for Use in Soils and Waters Ghulam Hussain, Muhammad Abdul Qayyum, and Ahmed N. Alajaji	85

Abstracted and/or indexed in: CAB International; Current Awareness in Biological Sciences; Information Science Abstracts; Referativnyi Zhurnal.

TAYLOR & FRANCIS

New York • Philadelphia • Washington, D.C. • London

Arid Soil Research and Rehabilitation

Volume 3, Number 2, 1989

Contents

Editorial

- Introduction: Potential of Biological Processes in Desertification Control
O.M. El-Tayeb and J. Skujips91

- Soil Organic Matter in Arid and Semiarid Ecosystems: Sources, Accumulation,
and Distribution
James O. Klemmedson99

- Organic Matter Decomposition and Retention in Arid Soils
D.E. Stott and J.P. Martin115

- Use of Organic Amendments for Increasing the Productivity of Arid Lands
J.F. Parr, R.I. Papendick, S.B. Hornick, and D. Colacicco149

- Municipal Organic Wastes and Composts for Arid Areas
John C. Glaub and Clarence G. Golueke171

- Cellulose Functions in Arid Soil Development
Donald A. Klein185

- Contributions of Soil Fauna to Decomposition and Mineralization Processes in
Semiarid and Arid Ecosystems
Walter G. Whitford and Lawrence W. Parker199

Abstracted and/or indexed in: CAB International; Current Awareness in Biological Sciences; Information Science Abstracts; Referativnyi Zhurnal.

Taylor & Francis

New York • Philadelphia • Washington, D.C. • London

Contents

Desert Crust Formation and Soil Stabilization Susan E. Campbell, Jacob-S. Seeler, and Stjepko Golubic	217
Mycorrhizae and Rehabilitation of Disturbed Arid Soils: Processes and Practices Michael F. Allen	229
Advances in the Utilization of Rhizobia in Arid Environments M.P. Nuti and S. Casella	243
Evaluation and Significance of Associative Dinitrogen Fixation for Arid Soil Rehabilitation L.H. Wullstein	259
Gaseous Losses of Nitrogen from Desert Region Soils T.C. Tucker and R.L. Westerman	267
Aspects of Microbial Activities and Dinitrogen Fixation in Egyptian Desert Soils A.S. Abdel-Ghaffar	281
Nitrogen Factor in Organic Matter Cycling and Utilisation in Arid Soils P. Newbould	295

Arid Soil Research and Rehabilitation

Volume 3, Number 3, 1989

Contents

Comparison of Se and As Concentrations in Soils of the Western San Joaquin Valley, California: 1946-1985

H.E. Doner, R.G. Amundson, and B. Lilieholm315

Water Requirements for Reclamation of Salt Affected Soils in Al-Ahsa, Saudi Arabia
Ghulam Hussain, Mohammad Hussain Badawi, and Yahya A. Nabulsi327

Vegetation-Soil Relations in an Area with Sealed Chromic Luvisols, Kenya
Paul T. Scholte337

Effect of Planting Method and Species on Germination and Survival
of Perennial Wheatgrasses (*Agropyron* spp.) Seeded during Drought
in the Moulouya Plain of Morocco
Charles W. Gay, Dale Nolte, Roger Banner, and M'Barek Fagouri349

Evaluation of Sedimentary Iron Pyrites as an Ameliorant for a Saline-Sodic Soil
in Uttar Pradesh, India
K.N. Tiwari, A. Kumar, M.R. Carter, and U.C. Gupta361

Microbial Community in the Rhizosphere of Native Plant Species Growing
on Reclaimed Coal Mine Soils Varying in Age
P.R. Fresquez and B.R. Sabey369

Dinitrogen Fixation (C_2H_2 -Reduction) by *Dalbergia sissoo* and *Leucaena leucocephala*
with Native Pakistani Rhizobia Strains
Z. Javid and R.F. Fisher385

Research Note: Occurrence of VAM Associations in Different Plant Species
of the Indian Desert
Kl'an Bala, A.V. Rao, and J.C. Tarafdar391

Abstracted and/or indexed in: CAB International; Current Awareness in Biological Sciences; Information Science Abstracts; Referativnyi Zhurnal.

Taylor & Francis

New York • Bristol, PA • Washington, DC • London

Arid Soil Research and Rehabilitation

Volume 3, Number 4, 1989

Contents

- Fertilizer Effects on Soil Microbial Communities and Organic Matter in the Rhizosphere of *Sitanion hystrix* and *Agropyron smithii*
D.A. Klein, B.A. Frederick, and E.F. Redente397
- Trace Elements in Desert Soils Irrigated with Nile and Wastewater
H. Meshref, M. El-Arquan, and I. Fawzi405
- Nitrogen Mineralization in Sludge-Amended Desert Soil as Affected by Rate of Sludge, Salinity, and Wetting and Drying Cycles
Abdel Hakeem M. Gomah, Saad I. Al-Nahid, and Hussien A. Amer417
- Acetylene Reduction in Salt-Tolerant Alfalfa/*Rhizobium* under Drought Stress
Ramzi M. Mohammad, W.F. Campbell, and M.D. Rumbaugh431
- An Irrigation Model for Peas and Cowpeas on Arid Coarse-Textured Soils under a Sprinkler System in Egypt
Y.Z. El-Shafei439
- Effect of High Doses of Elemental Sulfur on Barley Growth in an Alkaline Soil
M.D.K. Abo-Rady and Y.A. Nabulsi451
- Decomposition of Kinetics of Organic Wastes in a Sandy Soil under Field Conditions of Semiarid Environment
R.S. Malik, S. Kumar, and K.K. Girdhar459
- Acetylene Reduction Activity in Salt-Tolerant Alfalfa and *Rhizobium*
Ramzi M. Mohammad, W.F. Campbell, and M.D. Rumbaugh469
- Response of Tomatoes to Trickle Irrigation on Sandy Soil in an Arid Zone in Libya
Y.Z. El-Shafei477

Abstracted and/or indexed in: CAB International; Current Awareness in Biological Sciences; Information Science Abstracts; Referativnyi Zhurnal.

Taylor & Francis

New York • Bristol, PA • Washington, DC • London